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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/036,090	11/06/2001	Hiromitsu Takei	81868.0038	1996

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EXAMINER

NGUYEN, HANH N

ART UNIT            PAPER NUMBER

2834

DATE MAILED: 06/30/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

**Application No.**

10/036,090

**Applicant(s)**

TAKEI, HIROMITSU

**Examiner**

Nguyen N Hanh

**Art Unit**

2834

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1)  Responsive to communication(s) filed on 08 April 2003.
- 2a)  This action is **FINAL**.
- 2b)  This action is non-final.
- 3)  Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4)  Claim(s) 1-29 is/are pending in the application.
  - 4a) Of the above claim(s) 10-20 is/are withdrawn from consideration.
- 5)  Claim(s) \_\_\_\_\_ is/are allowed.
- 6)  Claim(s) 1-9 and 21-29 is/are rejected.
- 7)  Claim(s) \_\_\_\_\_ is/are objected to.
- 8)  Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9)  The specification is objected to by the Examiner.
- 10)  The drawing(s) filed on \_\_\_\_\_ is/are: a)  accepted or b)  objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11)  The proposed drawing correction filed on 08 April 2003 is: a)  approved b)  disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.
- 12)  The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13)  Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a)  All b)  Some \* c)  None of:
    - 1.  Certified copies of the priority documents have been received.
    - 2.  Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    - 3.  Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
  - \* See the attached detailed Office action for a list of the certified copies not received.
- 14)  Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
  - a)  The translation of the foreign language provisional application has been received.
- 15)  Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1)  Notice of References Cited (PTO-892)
- 2)  Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3)  Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_.
- 4)  Interview Summary (PTO-413) Paper No(s) \_\_\_\_\_.
- 5)  Notice of Informal Patent Application (PTO-152)
- 6)  Other: \_\_\_\_\_.

## DETAILED ACTION

### *Remarks*

1. In view of amendments, the Examiner withdraws the objection to the drawings. The addition of claims 21-29 has been acknowledged.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1,2,6-9, 21,22,26-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nagate et al. in view of Matsuo et al.

Regarding claim 1, Nagate et al. show a rotor for a permanent magnet embedded motor (Fig. 1), the rotor comprising: a rotor core made of magnetic material (Col. 7, lines 43-45) and having a plurality of slits (long and narrow cuts or openings) formed at corresponding poles; and at least one magnet embedded in at least one of the slits, wherein at least one of a length dimension and a width dimension of the at least one magnet in a cross-section orthogonal to an axis of the rotor is greater than a corresponding dimension of the at least one of the slits (Fig. 1 shows width dimension of the magnet is greater than corresponding dimension of the slit and length dimension of the magnet is greater than corresponding dimension of slit as described in Col. 8, lines 22-24), and the at least one magnet is fitted in the at least one of the slits under pressure (Col. 8, lines 18-24).

Nagate et al. do not show clearly that the magnet is bond magnet and at least one bond magnet is formed from a plate-shaped bond magnet.

However, Matsuo et al. disclose a rotor for a permanent magnet embedded motor wherein the magnet is bond magnet and at least one bond magnet is formed from a plate-shaped bond magnet for the purpose of improving elastic characteristic of the magnet.

Since Nagate et al. and Matsuo et al. are in the same field of endeavor, the purpose disclosed by Matsuo et al. would have been recognized in the pertinent art of Nagate et al.

It would have been obvious at the time the invention was made to a person having an ordinary skill in the art to modify Nagate et al. by using bond magnet and at least one bond magnet is formed from a plate-shaped bond magnet as taught by Matsuo et al. for the purpose of improving elastic characteristic of the magnet.

Regarding claim 21, it is noted that the rotor core (2) of Nagate et al. comprising a plurality of stacked plates (4) of magnetic material (abstract and Fig. 1). Therefore all limitations of the claimed invention have been fulfilled by Nagate et al. and Matsuo et al. as in claim 1.

Regarding claims 2 and 22, Nagate et al. also show a rotor wherein the at least one bond magnet has a length dimension and a width dimension that are both greater than those of the at least one of the slit.

Regarding claims 6 and 26, Nagate et al. also show another embodiment wherein each of the slits comprises a plurality of protrusions formed on an inner surface thereof to extend into a corresponding bond magnet fitted in the slit (Fig. 5).

Regarding claims 7 and 27, Matsuo et al. also show a rotor wherein the at least one bond magnet is flexibly compressive and flexibly contracted in the corresponding frame for the purpose of holding the magnet.

Since Nagate et al. and Matsuo et al. are in the same field of endeavor, the purpose disclosed by Matsuo et al. would have been recognized in the pertinent art of Nagate et al.

It would have been obvious at the time the invention was made to a person having an ordinary skill in the art to modify Nagate et al. by using bond magnet so that the at least one bond magnet is flexibly compressive and flexibly contracted in the corresponding slit as taught by Matsuo et al. for the purpose of holding the magnet.

Regarding claims 8 and 28, the structure disclosed by Nagate et al., modified by Matsuo et al. would have at least one bond magnet is flexibly compressive in at least one of a length direction and a width direction thereof and flexibly contracted in the corresponding slit in at least one of the length direction and the width direction.

Regarding claims 9 and 29, the structure disclosed by Nagate et al., modified by Matsuo et al. discloses the claimed invention except for showing a rotor according wherein at least one of the length dimension and the width dimension of the at least one bond magnet is approximately 5% larger than the corresponding dimension of the at least one of the slits. It would have been obvious to one having ordinary skill in the art at

the time the invention was made to make a rotor according wherein at least one of the length dimension and the width dimension of the at least one bond magnet is approximately 5% larger than the corresponding dimension of the at least one of the slits, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. In re Aller, 105 USPQ 233.

3. Claims 3-5,23-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nagate et al. in view of Matsuo et al. and further in view of Narita et al.

Regarding claims 3 and 23, Nagate et al. and Matsuo et al. show all limitations of the claimed invention except showing a rotor wherein each of the slits has an opening section in one of an arc shape, a V shape.

However, Narita et al. disclose a rotor wherein each of the slits has an opening section in one of an arc shape, a V shape (Fig. 14) for the purpose of embedding the magnets.

Since Nagate et al. and Matsuo et al. and Narita et al. are in the same field of endeavor, the purpose disclosed by Narita et al. would have been recognized in the pertinent art of Nagate et al. and Matsuo et al.

It would have been obvious at the time the invention was made to a person having an ordinary skill in the art to modify Nagate et al. and Matsuo et al. by forming opening section in one of an arc shape, a V shape as taught by Nagate et al. for the purpose of embedding the magnets.

Regarding claims 4,5,24 and 25, Narita et al. also show at least one of the slits has a partially narrow section in the width dimension thereof (Fig. 19) and the width dimension of the at least one of the slits changes in a length direction thereof (Fig. 1).

### ***Response to Arguments***

4. Applicant's arguments filed on 4/8/2003 have been fully considered but they are not persuasive. The applicant's argument is on the ground that Nagate does not show a rotor wherein "at least one of a length dimension and a width dimension of the at least one bond magnet in a cross-section orthogonal to an axis of the rotor is greater than a corresponding dimension of the at least one of the slits and it is not obvious to one of ordinary skill in the art to incorporate bond magnet of Matsuo to the rotor of Nagate's". The Examiner respectfully disagrees with the Applicant. Apart from slight difference in the structure of the opening to insert the magnet, Fig. 2 of Nagate clearly show a slit (Webster's dictionary interprets a slit as a long narrow cut or opening) formed between the protuberances 9 and it is inherent that the length dimension of the magnet in a cross-section orthogonal to an axis of the rotor is greater than the length dimension of the slit because the protuberances suffer deflection or plastic deformation in the outward direction R (Col. 8, lines 22-25). The length dimension of the magnet is less than the length dimension of slot 6 but greater the length dimension of the slit as recited in claim 1. Moreover, it would be obvious to one ordinary skill in the art to use compressible bond magnet as taught by Matsuo to ease the press-fitting process to insert the magnet to the rotor core. In short, the claims are interpreted as broad as

possible and they still do not clearly and distinctly claim the subject matter of the invention. Therefore, the rejection is still deemed proper

***Conclusion***

5. Applicant's amendment (the addition of claims 21-29) necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

***Information on How to Contact USPTO***

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hanh N Nguyen whose telephone number is (703)305-3466. The examiner can normally be reached on Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nestor Ramirez can be reached on (703)308-1371. The fax phone numbers



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for the organization where this application or proceeding is assigned are (703)305-3431 for regular communications and (703)305-3431 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)308-1782.

HNN

June 26, 2003



KARL TAMAI  
PRIMARY EXAMINER